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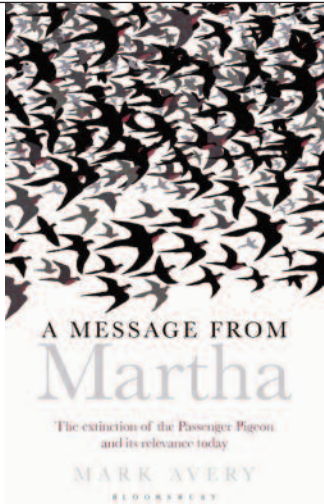
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## Book reviews

**Avery M.** 2014. *A Message from Martha. The extinction of the Passenger Pigeon and its relevance today.* Bloomsbury, London. Hardback, 304 pp., no illustrations. ISBN 978-1-4729-0625-0 (Hbck).



Can you imagine a sky filled with large pigeons, a ‘flock’ so dense that it blocks the sun as far as the eye can see? Can you imagine that such a mass of birds keeps passing over at great speed for the entire day, maybe another day, and sometimes yet another? Can you imagine woodlands with tens to hundreds of pigeon nests per tree that extend over a surface comparable to the Dutch province of Drenthe? Well, read what the American ornithologist Alexander Wilson saw when he travelled through Indiana, USA, in the early 1800s: “Coming to an opening by the side of a creek called the Benson, where I had a more uninterrupted view, I was astonished at their appearance. They were flying with great steadiness and rapidity at a height beyond gunshot in several strata deep, and so close together that could shot have reached them one discharge could not have failed of bringing down several individuals. From right to left, far as the eye could reach, the breadth of this vast procession extended, seeming everywhere equally crowded. Curious to determine how long this appearance would continue, I took out my watch to note the time, and sat down to observe them. It was then half-past one. I sat for more than an hour, but, instead of a diminution of this prodigious procession, it seemed rather to increase both in numbers and rapidity, and anxious to reach Frankfort before night, I rose and went on. About four

o’clock in the afternoon I crossed the Kentucky River at the town of Frankfort, at which time the living torrent above my head seemed as numerous and as extensive as ever. Long after this I observed them in large bodies that continued to pass for six or eight minutes, and these again were followed by other detached bodies, all moving in the same southeast direction, till after six in the evening.”

Wilson’s account is one of many and, together with stuffed birds, skins, skeletons and paintings in museums, comprises the legacy of what must have been a truly remarkable, now almost unimaginable, ecological phenomenon. The centennial of the death of Martha, the very last Passenger Pigeon *Ectopistes migratorius* (Latin for ‘the wanderer that migrates’), on 1 September 1914, between midday and 1 pm, in the Cincinnati Zoo and Botanical Garden, Ohio, has triggered a small spate of books on the demise of Passenger Pigeons. Greenberg (2014) is quite a complete account of the legacy, Fuller (2015) pretty much an assembly of relevant historical pictures. However, it is the (unillustrated) book ‘A message from Martha’ by Mark Avery which I would advise you to read if the story of Passenger Pigeons sounds intriguing.

Avery’s book is full of (new) biological insight and suspense, very clever, relevant for our current thinking on the burgeoning biodiversity crisis, and with some cute surprises. It features President Obama standing ‘by the statue of the Passenger Pigeon in Cincinnati Zoo, and looking straight into the lens of a camera’, delivering a typical (but imagined) Obama-speech on the loss of biodiversity, and a pledge that the United States of America will take a new course in environmental protection. You can hear him speak: “The Passenger Pigeon was a thoroughly American species – it lived only in the eastern parts of the United States where oak and beech forests predominated, and in the southern forests of our neighbour Canada. The Passenger Pigeon was the commonest bird on the planet, numbered in billions as we are now. So why it is no longer with us?”, and then develop a 10-point plan on the environment for implementation in the last years of his presidency (“working with members of Congress of all parties (for the environment should be one of the least political issues of all)”).

Avery sets the tone in a Preface (“The Passenger Pigeon had a way of life like no other on the planet, and we have lost its wonder forever. America is a fascinating mixture of bigotry and friendliness and

grandeur and banality, and this was a very American extinction.”), and first establishes the biology of the Passenger Pigeon. It was a Wood Pigeon *Columba palumbus*-sized pigeon, but with longer and more pointed wings, a longer tail and a deep keel supporting large pectoral muscles. It thus had the shape of a powerful and fast flyer, and indeed the speeds of flocks on passage were measured to be as high as 100 km/h (rather than the 60–80 km/h that we would expect from wader or duck flocks in flight). Passenger Pigeons were sexually dimorphic in plumage, with males having a colourful belly of which (according to John Muir) the fine rosy reds changed into gold, emerald green and rich crimson on the sides. Females lacked this lustre. The pigeons were vegetarian, specializing on beech mast, oak acorns and chestnuts (‘tree mast’), and they moved in synchrony in enormous numbers from woodland to woodland at a near-continental spatial scale in search of regions rich in tree mast. They bred in vast colonies, and, compared with other doves and pigeons, seemed to have sped through the incubation of a single egg and through chick rearing, to leave their near-fledgling ‘squabs’ grounded in the depleted breeding woods as they moved on for what must have been second summer breeding attempts. After a smart bit of comparative biology, Avery reckons that with only a single egg and a single nesting attempt per season, annual survival would have to have been just too high to be believable. In his imaginative style, he then outlines a modern research programme to fill the gaps in knowledge (had the birds still existed)!

The following chapter is an attempt to establish whether there really were several billions of Passenger Pigeon in the first half of the 19th century. This fact would make them the most numerous bird species ever known to exist and one that made up about half the avifaunal biomass of North America at the time! Although the answer is affirmative, a modern research programme is again developed for good measure. How could so many Passenger Pigeons have made a living, is a key ecological question, and an answer might help us understand their demise. Passenger Pigeons had the unique capacity to reap the rewards of spatially clumped tree masts across eastern North America. In doing this together in grand flocks, they were apparently able to track such resources on a continental scale and also find safety in numbers wherever they went or bred. That is, until the European invaders of North America entered the picture. Yet, the reconstruction of this destruction has to await an entertaining chapter on Avery’s American road trip in 2013 in search of the extinct bird.

The chapter with an annotated history of North America during the last 70 years of existence of Passenger Pigeons was perhaps a little more boring, but this is made up in the gripping last chapters. Here, Avery uses his newly won perspective to reflect on the death of Martha and the extinction of her species (‘The tolling bell?’), to then examine the plight of our own unique and migratory pigeon, the European Turtle Dove *Streptopelia turtur* (‘Bringing it all back home’). The loss of this bird is mainly due to reproductive failure because their summer seed resources are obliterated from the European countryside by what Avery proposes are ‘regressive’ ways of modern farming. He just cannot see how an energy-hungry system of growing wheat and corn that is addicted to the use of 20 rounds of agrochemicals per year and leaves no room for Turtle Doves and other glorious migrants, means progress. Worse, a leading organization like the UK National Farmers Union not only fails to encourage the available alternative systems, but is actually ignoring the evidence for biodiversity loss; how recognizable for a similarly worried Dutchman!

Martha, of course, has the last word: “I forgive you for wiping out my species – you really didn’t mean to do it, and maybe you knew no better. ...Whether you do better in the future is a test of your worth as a species. You have the knowledge and ability to live sustainably on this planet but it’s a hard road from where you are now. It’s no longer a matter of what you know – you know enough. From here on, it’s a test of whether you care – do you care enough? Please care. Please do better. Please start now.”

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